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AMENDMENTS IN THE CLAIMS:

1. (Currently Amended) A low noise solid state thermostat, comprising:

a thermostat input operatively configured to be coupled to a temperature sensor;

a comparator for comparing an output of the temperature sensor to a predefined setpoint temperature; and

solid-state switching circuitry operatively coupled to the comparator for selectively switching current to a thermostat output based on the comparison by the comparator,

wherein the comparator comprises a <u>commercially available</u> microprocessor for comparing the output of the temperature sensor to the predefined setpoint temperature, the predefined setpoint temperature being programmed into a memory accessible by the microprocessor.

2. (Original) The thermostat of claim 1, wherein the memory is an internal memory within the microprocessor.

3. (Original) The thermostat of claim 1, wherein the predefined setpoint temperature comprises an upper band setpoint temperature and a lower band setpoint temperature.

4. (Original) The thermostat of claim 1, further comprising a programming interface for programming the predefined setpoint temperature into the memory.

5. (Original) The thermostat of claim 4, wherein the predefined setpoint temperature comprises an upper band setpoint temperature and a lower band setpoint temperature which are programmed into the memory via the programming interface.

6. (Currently Amended) A low noise solid state thermostat, comprising:

a thermostat input operatively configured to be coupled to a temperature sensor;

a comparator for comparing an output of the temperature sensor to a predefined setpoint temperature;

solid-state switching circuitry operatively coupled to the comparator for selectively switching current to a thermostat output based on the comparison by the comparator; and

a <u>commercially available</u> microprocessor configured to monitor operation of the thermostat and to detect a fault in the operation.

7. (Original) The thermostat of claim 6, wherein the microprocessor detects a plurality of types of faults in the operation.

8. (Original) The thermostat of claim 6, wherein the microprocessor detects an open fault at the output of the thermostat.

9. (Original) The thermostat of claim 6, wherein the microprocessor detects a short fault in the solid-state switching circuitry.

10. (Original) The thermostat of claim 6, wherein the microprocessor detects an open fault in the solid-state switching circuitry.

11. (Original) The thermostat of claim 6, wherein the microprocessor detects a short fault in the temperature sensor.

12. (Original) The thermostat of claim 6, wherein the microprocessor detects an open fault in the temperature sensor.

13. (Original) The thermostat of claim 6, wherein the microprocessor detects an overtemperature fault.

14. (Original) The thermostat of claim 6, further comprising a reporting output for reporting detection of a fault to an external device.

15. (Original) The thermostat of claim 14, wherein the reporting output provides information indicative of the particular fault.

16. (Original) The thermostat of claim 6, wherein the microprocessor detects a fault in the temperature sensor based on a voltage across the temperature sensor.

17. (Original) The thermostat of claim 6, wherein the microprocessor detects an overtemperature fault based on another temperature sensor internal to the microprocessor.

18. (Original) The thermostat of claim 6, wherein the microprocessor detects a fault in the solid-state switching circuitry by counting pulses associated with operation of the solid-state switching circuitry.

19. (Original) The thermostat of claim 18, wherein the solid-state switching circuitry comprises first and second power transistors connected in series with the heating element.

20. (Original) The thermostat of claim 19, wherein the pulses are generated by current sense resistors connected in the series.

21. (Withdrawn) A method for coupling a heat generating device to a heat sink, comprising the steps of:

applying one side of a layer of thermally conductive double-sided tape to one of the heat generating device and the heat sink; and

applying an other side of the layer of thermally conductive double-sided tape to the other of the heat generating device and the heat sink.

22. (Withdrawn) The method of claim 21, further comprising the step of encapsulating the combined heat generating device, heat sink and double-sided tape.

23. (Withdrawn) The method of claim 21, wherein the heat generating device is a power transistor.